INTRAC 204 Antenna Control Unit

For Antennas up to: 9.6 meters in C-Band or 4.5 meters in Ku-Band

Features

- Low cost, high performance and high reliability for antennas up to 9.6 metres in diameter C-Band and 4.5 metres in diameter Ku-Band
- INTRAC™ orbit modelling algorithm offers the highest tracking Integrity
- Accurately tracks satellites with orbital inclinations up to and beyond 10°
- Built in 36VDC, 8A drive unit to directly drive DC actuators with sequential Dual Axis drive
- Average tracking signal degradation less than 0.1dB
- Accepts high resolution resolver transducers down to 20 arc seconds (16 bits)
- Compatible with INTELSAT and EUTELSAT SCPC tracking specifications
- Tolerates signal fluctuations that defeat step track and memory track controllers
- Resilient to tracking signal loss, maintaining integrity for up to 72 hours
- Non-volatile memory ensures tracking is resumed after power failure
- Full M&C control via RS232 / RS422 interface
- Can Incorporate IBRL-7 integral L-band beacon receiver
- Option to drive a third polarization axis

Overview

The INTRAC™ 204 Antenna Control Unit enables satellite earth station antennas to accurately track geosynchronous satellites with orbital inclinations up to and beyond 10°. The unit offers superior tracking integrity with any C-Band antenna up to 9.6 meters and any Ku-Band antenna up to 4.5 meters. The control unit uses the INTRAC (INtelligent TRacking Antenna Control) algorithm which has been developed and refined over a 20 year period. It offers exceptional immunity to propagation disturbances and fades, maintaining reliable pointing accuracy even at low angles of elevation in regions of high scintillation.

The INTRAC 205 is compatible with INTELSAT and EUTELSAT SCPC tracking specifications. It is able to tolerate signal fluctuations that defeat step track and memory track controllers and is resilient to loss of tracking signal, the unit will maintain tracking integrity for blackout periods up to 72 hours. The non-volatile memory ensures that accurate tracking is resumed after power failure.

The unit incorporates 36VDC motor drive circuits providing a single box solution that is simple to install, reducing set up costs. It features full remote monitoring and control via an RS232 / RS423 serial interface. Average tracking signal degradation is less than 0.2dB. The INTRAC 204 features a two-line LCD display and can be supplied with an integral L-Band beacon receiver.

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INTRAC 204 Antenna Control Unit

SPECIFICATIONS

	Standby — Manual (Jog) — Search — Remote Control Auto (INTRAC) — Go To (Position Designate)
Tracking Accuracy	Typically better than 0.1dB RMS signal degradation after tracking for 24 hours (with tracking signal), for orbit inclinations up to 10°
Prediction Accuracy	Typically better than 0.1dB RMS signal degradation over 72 hours (after loss of tracking signal), for orbit inclinations up to 10°
Backup	Model data is stored in EEPROM and the real time clock supported by battery backup against power failure
Configuration Memory	Configuration data is stored in EEPROM
Tracking Signal	May be derived from an external tracking receiver or optionally from the integral IBR-L beacon receiver
External Tracking Signal	Voltage varying directly with received signal strength (in dB). Sensitivity 0.1V / dB to 1.0V / dB Offset + / - 10 volts max Lost Lock input, contact closure when tracking signal is lost.
Display	2 line LCD display giving the areas of information: Azimuth angle — Signal strength — Elevation angle Diagnostics — Polarization angle Mode of operation — Operational menus
Drive Outputs	36VDC, up to 8A for direct drive of DC actuator motors
Limit Switches	Limit switch inputs for elevation, azimuth and polarization. Contacts normally closed
Position Transducers	Inputs for standard resolver position transducers

Internal IBR-L Beacon Receiver

This option accepts an L-Band signal, with an input level of -80 to -45dBm.

The signal voltage and lock lost indicators are generated internally. The need for an external beacon receiver is eliminated.

Remote Control Terminal	IBM PC compatible software is available to provide a remote control terminal function. The terminal monitors and controls the INTRAC via the standard serial remote control port and provides facilities for managing and storing multiple orbit models. Alarm information is still available at the front panel.
Polarisation Option	Option to accept a polarization position transducer and to drive a 36VDC polarization motor.

Temperature Range	0 to 50°C - Operating -25°C to 85°C - Non Operating (storage)
Humidity	5% to 95% RH non condensing - Operating 0% to 99% RH non condensing - Non Operating (storage)
Altitude	10,000 feet max
Input Power	110 or 230V, single phase, 50/60Hz, 50W
Dimensions	483mm (W) x 133mm (H) x 443mm (D).
Mounting	19" rack mounting unit, 2U high.
Weight	8 kg

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